

ABSTRACT OF THE DISCLOSURE

A two-inductor boost converter includes an integrated magnetic core having a three-legged flux-conducting element with an energy-storing gap, for example in the center leg. Two primary
5 windings are disposed on respective legs, such as the outer legs, and are coupled in parallel to one input terminal of the converter. Two series-connected secondary windings are also disposed on the flux-conducting element, and are connected to rectification and filtering circuitry which may have full bridge,
10 full wave, or voltage doubler configuration. Primary-side switches are coupled in series between each primary winding and the other converter input terminal. Control circuitry generates control signals for the primary-side switches, providing for a desired degree of overlapped conduction during each operating cycle along
15 with periods of non-conduction that result in transferring electrical energy to the load. The integrated magnetic core can include additional windings for ancillary functions, such as for flyback operation during start-up.

301301-1